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## NOTICE OF ALLOWANCE AND FEE(S) DUE

04859 7590 05/03/2006

MACMILLAN SOBANSKI & TODD, LLC  
ONE MARITIME PLAZA FOURTH FLOOR  
720 WATER STREET  
TOLEDO, OH 43604-1619



|                         |              |
|-------------------------|--------------|
| EXAMINER                |              |
| PAK, JOHN D             |              |
| ART UNIT                | PAPER NUMBER |
| 1616                    |              |
| DATE MAILED: 05/03/2006 |              |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR        | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------------|---------------------|------------------|
| 10/773,062      | 02/05/2004  | Michael Christopher O'Brien | I-24174             | 6040             |

TITLE OF INVENTION: METHOD OF TREATING LIVESTOCK FOOTBATH SOLUTIONS

| APPLN. TYPE    | SMALL ENTITY | ISSUE FEE | PUBLICATION FEE | TOTAL FEE(S) DUE | DATE DUE   |
|----------------|--------------|-----------|-----------------|------------------|------------|
| nonprovisional | YES          | \$700     | \$0             | \$700            | 08/03/2006 |

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

## HOW TO REPLY TO THIS NOTICE:

## I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fce(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

## PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to:** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax (571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

04859      7590      05/03/2006  
**MACMILLAN SOBANSKI & TODD, LLC**  
**ONE MARITIME PLAZA FOURTH FLOOR**  
**720 WATER STREET**  
**TOLEDO, OH 43604-1619**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

### Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

|                    |
|--------------------|
| (Depositor's name) |
| (Signature)        |
| (Date)             |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR        | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------------|---------------------|------------------|
| 10/773,062      | 02/05/2004  | Michael Christopher O'Brien | 1-24174             | 6040             |

TITLE OF INVENTION: METHOD OF TREATING LIVESTOCK FOOTBATH SOLUTIONS

| APPLN. TYPE    | SMALL ENTITY | ISSUE FEE | PUBLICATION FEE | TOTAL FEE(S) DUE | DATE DUE   |
|----------------|--------------|-----------|-----------------|------------------|------------|
| nonprovisional | YES          | \$700     | \$0             | \$700            | 08/03/2006 |

| EXAMINER    | ART UNIT | CLASS-SUBCLASS |
|-------------|----------|----------------|
| PAK, JOHN D | 1616     | 424-711000     |

- |  |  |
|--|--|
| 1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).<br><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.<br><input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. <b>Use of a Customer Number is required.</b> | 2. For printing on the patent front page, list<br>(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,<br>(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.<br>1 _____<br>2 _____<br>3 _____ |
|--|--|

**3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)**

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent):  Individual  Corporation or other private group entity  Government

**4a. The following fee(s) are enclosed:**

- Issue Fee  
 Publication Fee (No small entity discount permitted)  
 Advance Order - # of Copies \_\_\_\_\_

**4b. Payment of Fee(s):**

- A check in the amount of the fee(s) is enclosed.  
 Payment by credit card. Form PTO-2038 is attached.  
 The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

**5. Change in Entity Status (from status indicated above)**

- a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.  b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



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| APPLICATION NO.                 | FILING DATE | FIRST NAMED INVENTOR        | ATTORNEY DOCKET NO. | CONFIRMATION NO.        |
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| 10/773,062                      | 02/05/2004  | Michael Christopher O'Brien | I-24174             | 6040                    |
| 04859                           | 7590        | 05/03/2006                  |                     |                         |
|                                 |             |                             | EXAMINER            |                         |
| MACMILLAN SOBANSKI & TODD, LLC  |             |                             | PAK, JOHN D         |                         |
| ONE MARITIME PLAZA FOURTH FLOOR |             |                             |                     |                         |
| 720 WATER STREET                |             |                             | ART UNIT            | PAPER NUMBER            |
| TOLEDO, OH 43604-1619           |             |                             | 1616                |                         |
|                                 |             |                             |                     | DATE MAILED: 05/03/2006 |

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 393 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 393 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

|                               |                        |                                 |  |
|-------------------------------|------------------------|---------------------------------|--|
| <b>Notice of Allowability</b> | <b>Application No.</b> | <b>Applicant(s)</b>             |  |
|                               | 10/773,062             | O'BRIEN, MICHAEL<br>CHRISTOPHER |  |
|                               | <b>Examiner</b>        | <b>Art Unit</b>                 |  |
|                               | JOHN PAK               | 1616                            |  |

-- **The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to \_\_\_\_\_.
2.  The allowed claim(s) is/are 1-5, 7-8, 10-12, 15-20 [Renumbered as 1-16].
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All b)  Some\* c)  None of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1.  Notice of References Cited (PTO-892)
  2.  Notice of Draftperson's Patent Drawing Review (PTO-948)
  3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 5/13/04
  4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
-   
JOHN PAK  
PRIMARY EXAMINER  
GROUP 1600
5.  Notice of Informal Patent Application (PTO-152)
  6.  Interview Summary (PTO-413),  
Paper No./Mail Date 04242006.
  7.  Examiner's Amendment/Comment
  8.  Examiner's Statement of Reasons for Allowance
  9.  Other \_\_\_\_\_.

Claims 1-20 are pending in this application.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Sutter on 4/25/2006.

**Cancel** claims 6, 9 and 13-14.

Claim 1. (Currently amended) A method of treating livestock hooves for reducing or treating bacterial infections of the hooves comprising:

providing an aqueous footbath solution comprising 10 to 35 pounds of an alkali metal bisulfate per 50 gallons of water, wherein the pH of the solution is less than about 4; and

leading a livestock animal to walk through the aqueous footbath solution to immerse the hooves in the solution.

Claim 4. (Currently amended) A method according to claim 1, wherein the alkali metal bisulfate kills bacteria in the aqueous footbath solution.

Claim 5. (Currently amended) A method according to claim 1, wherein the alkali metal bisulfate kills bacteria on the hooves of the livestock.

Claim 7. (Currently amended) A method according to claim 1, wherein the alkali metal bisulfate reduces the pH of the aqueous footbath solution to less than about 3.

Claim 8. (Currently amended) A method according to claim 1, wherein the alkali metal bisulfate is effective for between about 250 and about 400 livestock uses of the footbath to keep the pH of the solution at a level less than about 4.

Claim 10. (Currently amended) A method according to claim 1, wherein the alkali metal bisulfate is present in the aqueous footbath solution at a level between about 15 pounds and about 25 pounds of alkali metal bisulfate per 50 gallons of water.

Claim 11. (Currently amended) A method according to claim 1, wherein the alkali metal bisulfate contains less than about 0.01 wt% heavy metals.

Claim 12. (Currently amended) A method according to claim 11, wherein the alkali metal bisulfate contains less than about 0.003 wt% heavy metals.

Claim 15. (Currently amended) A method of treating livestock hooves for reducing or treating bacterial infections of the hooves comprising:

providing an aqueous footbath solution comprising 10 to 35 pounds of an alkali metal bisulfate per 50 gallons of water in admixture with an additional agent effective for reducing or treating bacterial infections of the hooves, wherein the pH of the solution is less than about 4; and

leading a livestock animal to walk through the aqueous footbath solution to immerse the hooves in the solution.

Claim 17. (Currently amended) A method according to claim 15, wherein said additional agent is copper sulfate and/or zinc sulfate.

Claim 18 (Currently amended). A method of treating livestock hooves for reducing or treating bacterial infections of the hooves comprising:

(1) providing a first aqueous footbath solution comprising 10 to 35 pounds of an alkali metal bisulfate per 50 gallons of water, wherein the pH of the solution is less than about 4;

(2) providing a second aqueous footbath solution comprising an agent effective for reducing or treating bacterial infections of the hooves, wherein said agent is not alkali metal bisulfate; and

(3) leading a livestock animal to walk through either the first aqueous footbath solution or the second aqueous footbath solution to immerse the hooves in the solution, and then rotating with the other aqueous footbath solution the next time the livestock animal is in need of a footbath treatment.

Claim 20. (Currently amended) A method according to claim 18, wherein said agent is copper sulfate and/or zinc sulfate.

The following is an examiner's statement of reasons for allowance: Bacterial diseases of the hooves of livestock animals have serious economic impact (see e.g., Drake, Hauptmeier). Infected or lame livestock animals suffering from such diseases

must be detected, separated, treated and/or culled, draining labor resources as well as reducing agricultural value.

Although footbath solutions have long been used in this field to reduce or treat such diseases (e.g., Ames, Kemp et al., Hauptmeier), livestock animals continue to suffer from bacterial diseases of the hooves. Applicant's invention provides an effective and convenient method of treating livestock animals for reducing or treating bacterial diseases of the hooves. Although Derwent abstract 1993-263107 discloses similar compositions (2.13% **ammonium** hydrogen sulfate + other ingredients, no footbath disclosed), applicant's claims require the footbath use of **alkali metal** bisulfate in at least about 2.4 w/v% (equivalent to the lowest claimed amount of 10 pounds per 50 gallons), wherein the pH of the footbath solution is less than about 4. The prior art taken as a whole fails to adequately disclose or suggest such features. There is insufficient motivation to substitute this reference's ammonium bisulfate, which is used in conjunction with another ammonium compound, with alkali metal bisulfate and to further modify by leading livestock animals to walk through the aqueous footbath solution to immerse their hooves in the footbath solution. In view of the disclosed additional benefit of being mild on the hooves and skin of the livestock (specification page 3, lines 20-28), the claimed invention, as a whole, is deemed to be patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to JOHN PAK whose telephone number is **(571)272-0620**. The Examiner can normally be reached on Monday to Friday from 8 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's SPE, Sreeni Padmanabhan, can be reached on **(571)272-0629**.

The fax phone number for the organization where this application or proceeding is assigned is **(571)273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is **(571)272-1600**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Application/Control Number: 10/773,062  
Art Unit: 1616

Page 7

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JOHN PAK  
PRIMARY EXAMINER  
1600

|                          |                        |                                 |
|--------------------------|------------------------|---------------------------------|
| <b>Interview Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b>             |
|                          | 10/773,062             | O'BRIEN, MICHAEL<br>CHRISTOPHER |
|                          | <b>Examiner</b>        | <b>Art Unit</b>                 |
|                          | JOHN PAK               | 1616                            |

All participants (applicant, applicant's representative, PTO personnel):

(1) JOHN PAK. (3) \_\_\_\_\_.

(2) GARY SUTTER. (4) \_\_\_\_\_.

Date of Interview: 4/24/06 & 4/25/06.

Type: a) Telephonic b) Video Conference  
c) Personal [copy given to: 1) applicant 2) applicant's representative]

Exhibit shown or demonstration conducted: d) Yes e) No.

If Yes, brief description: Examiner Pak faxed a draft claim proposal (see attached).

Claim(s) discussed: All.

Identification of prior art discussed: \_\_\_\_\_.

Agreement with respect to the claims f) was reached. g) was not reached. h) N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: The Examiner attempted to advance prosecution by proposing claim amendments that could be further reviewed for a more focused examination for allowability. On 4/25/06, Mr. Sutter authorized an Examiner's Amendment to correspond to the faxed proposal, if such amended claims can be found allowable.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.



Examiner's signature, if required

## Summary of Record of Interview Requirements

### **Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record**

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### **Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews**

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

#### **Examiner to Check for Accuracy**

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.



Page 1 of 1

Claim 1. (Currently amended) A method of treating livestock hooves for reducing or treating bacterial infections of the hooves comprising:

providing an aqueous footbath solution comprising 10 to 35 pounds of an alkali metal bisulfate per 50 gallons of water, wherein the pH of the solution is less than about 4; and

leading a livestock animal to walk through the aqueous footbath solution to immerse the hooves in the solution.

\*\*Appropriately amend/cancel dependent claims to correspond in language to above.

Claim 15. (Currently amended) A method of treating livestock hooves for reducing or treating bacterial infections of the hooves comprising:

providing an aqueous footbath solution comprising 10 to 35 pounds of an alkali metal bisulfate per 50 gallons of water in admixture with an additional agent effective for reducing or treating bacterial infections of the hooves, wherein the pH of the solution is less than about 4; and

leading a livestock animal to walk through the aqueous footbath solution to immerse the hooves in the solution.

\*\*Appropriately amend/cancel dependent claims to correspond in language to above.

Part of Interview Summary Record —

Claim 18 (Currently amended). A method of treating livestock hooves for reducing or treating bacterial infections of the hooves comprising:

- (1) providing a first aqueous footbath solution comprising 10 to 35 pounds of an alkali metal bisulfate per 50 gallons of water, wherein the pH of the solution is less than about 4;
- (2) providing a second aqueous footbath solution comprising an agent effective for reducing or treating bacterial infections of the hooves, wherein said agent is not alkali metal bisulfate; and
- (3) leading a livestock animal to walk through either the first aqueous footbath solution or the second aqueous footbath solution to immerse the hooves in the solution, and then rotating with the other aqueous footbath solution the next time the livestock animal is in need of a footbath treatment.

Part of Interview Summary Record

|                                   |                         |   |             |
|-----------------------------------|-------------------------|---|-------------|
| <b>Notice of References Cited</b> | Application/Control No. | Applicant(s)/Patent Under Reexamination |             |
|                                   | 10/773,062              | O'BRIEN, MICHAEL CHRISTO                |             |
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|   | B | US-  |                 |                       |                |
|   | C | US-  |                 |                       |                |
|   | D | US-  |                 |                       |                |
|   | E | US-  |                 |                       |                |
|   | F | US-  |                 |                       |                |
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|   | L | US-  |                 |                       |                |
|   | M | US-  |                 |                       |                |

**FOREIGN PATENT DOCUMENTS**

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|---|---|--|-----------------|---------|------|----------------|
|   | N |  |                 |         |      |                |
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|   | R |  |                 |         |      |                |
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|   | T |  |                 |         |      |                |

**NON-PATENT DOCUMENTS**

| * |   | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)  |
|---|---|--|
|   | U | Drake, Michael, "Footrot crisis for farmers," Belfast Telegraph, 12/26/2005, page 1.   |
|   | V | Hauptmeier, Larry D. 'Footrot in Beef Cattle' [online] Iowa Beef Center, March 1997 [retrieved on April 24, 2006], Retrieved from the Internet: <URL: <a href="http://www.iowabeefcenter.org/Publications/footrot.pdf">http://www.iowabeefcenter.org/Publications/footrot.pdf</a> >. |
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\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
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Databases selected: Multiple databases...

## Footrot crisis for farmers

*Michael Drake*, Belfast Telegraph. Belfast: Dec 26, 2005. pg. 1

Companies: Schering-Plough Animal Health Corp (NAICS: 325412 )

Author(s): Michael Drake

Publication title: Belfast Telegraph. Belfast: Dec 26, 2005. pg. 1

Source type: Newspaper

ISSN/ISBN: 03075664

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Document URL: <http://proquest.umi.com/pqdweb?did=948211531&sid=2&Fmt=3&clientId=19649&RQT=309&VName=PQD>

### Abstract (Document Summary)

Northern Ireland sheep farmers are suffering a 10% drop in annual income due to footrot in their animals, a leading veterinary expert has claimed. Fergal Morris, veterinary adviser with Schering Plough Animal Health said: "An average of 10% of the 1.1 million breeding sheep on Northern Ireland's 8,700...

### Full Text (140 words)

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Northern Ireland sheep farmers are suffering a 10% drop in annual income due to footrot in their animals, a leading veterinary expert has claimed. Fergal Morris, veterinary adviser with Schering Plough Animal Health said: "An average of 10% of the 1.1 million breeding sheep on Northern Ireland's 8,700 sheep farms suffer from footrot. "In many flocks, up to 20% of sheep are infected." This is resulting in serious income losses, not to mention the huge drain on labour involved in treating infected animals." Research shows that the income drop from a sheep infected with footrot could be as high as 60% as a result of poor performance, smaller lambs at birth, lower milk yields immediately after lambing, culling and treatment costs. The overall loss in income per farm could be over 10%, " he added. "Effective control measures combined with vaccination can dramatically reduce the problem."

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# Iowa Beef Center

To enhance the vitality, profitability, and growth of the beef industry of Iowa

## Footrot In Beef Cattle

Larry D. Hauptmeier, DVM  
Extension Veterinarian  
Iowa State University

Footrot is an acute infectious disease of cattle characterized by swelling and lameness in one or more feet. It is also known as interdigital necrobacillosis, interdigital pododermatitis, and interdigital phlegmon. Footrot can become chronic if treatment is not provided or is delayed.

### Etiology:

*Fusobacterium necrophorum* is a causative organism, but there is disagreement about whether it can produce disease alone or invades synergistically with another organism, *Bacteroides melaninogenicus*. Both organisms are nonmotile, anaerobic, gram negative bacteria that are routinely cultured from footrot lesions<sup>(1)</sup>. However, *F. necrophorum* is capable of causing footrot by itself when experimentally injected into the skin of the interdigital space. *Bacteroides nodosus*, the agent causing ovine footrot, may also be involved<sup>(2)</sup>. These organisms are common in the environment, and *F. necrophorum* is present in the rumen and feces of normal cattle<sup>(1)</sup>.

Researchers do not agree on how long *F. necrophorum* can survive in the environment. One source states that the organism can survive for a maximum of one month<sup>(3)</sup>, another that it can survive in soil for up to 10 months<sup>(1)</sup>. Wet conditions, soil pH, and constant replenishment from cattle feces are probably the dominant reasons for the high numbers of these organisms in the environment. The factors which contribute to the pathogenicity of *F. necrophorum* include a potent endotoxin, a polysaccharide capsule, an exotoxin (a leukocidin), and a hemolysin<sup>(4)</sup>. The leucotoxin kills phagocytic cells and allows the infection to persist<sup>(1)</sup>.

### Epidemiology:

Footrot of cattle is common in most countries and is one of the most common causes of lameness.

Morbidity varies from one or two animals in a herd or pen to explosive outbreaks with very high morbidity. The disease is seen year round, but the prevalence is usually higher when lots and pens are wet and muddy. All ages are susceptible, but the disease is most commonly seen in cattle of weaning age and older. The same animals may be affected repeatedly. Acquired immunity to the bacteria appears to be poor<sup>(1)</sup>.

The organisms cannot penetrate intact, healthy skin, so the factors predisposing to interdigital infection are those affecting skin integrity, such as abrasive surfaces, stones, frozen or dried mud, stubble, and wet pens. Zinc and possibly other trace mineral deficiencies may complicate susceptibility to footrot<sup>(5)</sup>. The fact that the disease is common on some farms and does not occur at all on others suggests that factors affecting spread of the disease are not well understood. For instance, there may be factors which limit the persistence of infectivity in certain soils<sup>(3)</sup>. Individual susceptibility may be affected by nutritional, genetic, or other unknown factors.

During 30 years of cow/calf and feedlot practice, the author has observed that footrot outbreaks frequently occur when cattle in a feedlot are moved to a recently cleaned pen or immediately after fresh soil is added to a pen. Most outbreaks of this type have occurred during dry conditions. In fact, the author's experience has shown that many explosive outbreaks with high morbidity occur when feedlots are powdery dry.

### Clinical Signs:

There is usually a sudden onset of mild to severe lameness with swelling of the coronet and interdigital space. The interdigital space is often necrotic and fissured, with a characteristic foul odor but little exudate. Body temperature is often elevated, appetite reduced, and body condition lost. Affected animals

will not aggressively approach the feedbunk. Grazing is reduced in pastured animals. Breeding bulls are incapacitated, especially if a hind foot is involved.

Differential diagnosis includes foreign bodies in the interdigital space, interdigital dermatitis (hairy heel warts), interdigital hyperplasia (corns), wire or twine nooses around a foot or claw, sole bruises and abscesses, toe abscesses, and fractures of the bones of the foot. Suppurative changes in the joints and tendon sheaths may be found in severe cases.

### Treatment and Control:

Early administration of systemic antibiotics or sulfonamides and local treatment of the foot lesion usually result in rapid healing with only one treatment. However, the response to treatment should be evaluated and animals retreated as necessary. The main purposes of local treatment are to rule out foreign body involvement in individual cases and to clean the foot and keep it clean. Antibacterial ointments and bandages can be applied. When large numbers of feedlot cattle are involved, examination of the foot and local treatment are often omitted because of the time involved. It is helpful if the animals can be prevented from access to wet, muddy areas. Whenever mass treatment is needed to stop an outbreak, either sulfamethazine in the drinking water or chlortetracycline in the feed is effective<sup>(1)</sup>.

In severely advanced cases where treatment is delayed or ineffective, the organism penetrates to adjacent tendon sheaths, joint capsules, and/or bone. At this point, prognosis is bleak. When one claw shows involvement and the other one doesn't, as is frequently the case, the affected claw can be surgically removed, thereby restoring the animal to productivity.

Preventive measures include minimizing abrasive surfaces and wet areas, especially in feeding and watering areas where cattle spend a lot of time. Other methods of prevention include the use of footbaths, feeding a low level of chlortetracycline, feeding zinc methionine, and/or vaccination<sup>(3)</sup>. Footbaths containing 5-10% copper sulfate or 5-10% zinc sulfate placed in locations where cattle must walk have been used, but maintaining clean solutions is a problem<sup>(3)</sup>. A dry footbath containing a mixture of 10% copper sulfate and 90% slaked lime has also been used<sup>(3)</sup>. Feeding 500 mg chlortetracycline per head per day to feedlot cattle for 28 days, followed by 75 mg per day throughout the finishing period has been recommended

but controlled comparative trials have not been done<sup>(3)</sup>. Oral zinc has been successfully used to treat and prevent footrot, but the mode of action is unclear. It has been theorized that the added zinc promotes antibody production or accelerates tissue repair<sup>(5)</sup>. A commercial vaccine has recently been approved for use, but the manufacturer specifically states that 2 doses must be given to be effective. Early results have shown up to 70% reduction in morbidity in controlled tests<sup>(6)</sup>. Your veterinarian can identify local factors that may be important in treating and preventing footrot.

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- (6) Christensen, C.R., DVM. Personal Communication, Mar., 1997.

AN 1993-263107 [33] WPIDS  
DNN N1993-201600 DNC C1993-117490  
TI Disinfectant compsn. for farms - contains ammonium per sulphate and bi sulphate, and penazolin to increase activity.  
DC D22 E19 E35 P34  
IN AKBASOVA, A D; IMANGALIEV, A K; OMAROV, M O  
PA (KVET) KAZA VETERINARY RES INST; (UYKA) UNIV KAZA  
CYC 1  
PI SU 1752400 A1 19920807 (199333)\* 3  
ADT SU 1752400 A1 SU 1990-4847263 19900722  
PRAI SU 1990-4847263 19900722  
AB SU 1752400 A UPAB: 19931119  
Compsn. contains (in weight%): 28.4-39.7 ammonium persulphate, 59.5-71 ammonium **hydrogen sulphate** and 0.6-0.8 Penazolin. (I)  
is based on a mixture of imidazolines containing aminoamides with 7-9C alkyl gp.  
The compsn. is used in the form of aqueous 0.5-3.0% solution  
USE/ADVANTAGE - The compsn. has a wide spectrum of antimicrobial action, is odourless, has low corrosivity, is stable on storage and its decomposition prods. are ecologically harmless. The mixture is more efficient. It is used in animal farms to disinfect e.g. animal **hooves** and living areas, with the consumption reduced to 0.21/m<sup>2</sup>.  
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Dwg.0/0



## Patent Technology Centers

### Facsimile Transmission

To: Name: Mr. Sutter  
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37 C.F.R. 1.6 sets forth the types of correspondence that can be communicated to the Patent and Trademark Office via facsimile transmissions. Applicants are advised to use the certificate of facsimile transmission procedures when submitting a reply to a non-final or final Office action by facsimile (37 CFR 1.8(a)).

#### Fax Notes:

Mr. Sutter,

Please review the following draft claims for discussion purposes. I reserve an opportunity to correct for any mistakes in spelling, grammar or technical considerations. I believe these changes will advance prosecution. Although this is not yet a formal indication of allowability, if applicant would conditionally agree to these changes (i.e. authorize only if can be found allowable), I will then proceed to double check everything to ensure that it is in fact allowable.

The 10-35 pounds per 50 gallons + pH less than about 4 were added

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Date and time of transmission: Monday, April 24, 2006 11:42:18 AM  
Number of pages including this cover sheet: 03

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